

# Notice of Allowability

Application No.

09/786,642

Applicant(s)

KAWAHARA ET AL.

Examiner

Michael N. Opsasnick

Art Unit

2655

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to response filed 11/12/2004.
2. ☒ The allowed claim(s) is/are 1-6.
3. ☒ The drawings filed on 07 March 2001 and 10 June 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, see the detailed explanation on pp 2 of the response, filed 11/16/2004, with respect to the 35 U.S.C. 112 first paragraph lack of enablement rejection dated 8/12/2004 have been fully considered and are persuasive. Examiner notes that the explanation given by the applicant points to the specification, page 10, lines 11-17 to explain the terms of instantaneous-frequency frequency differentiation. Page 10 of the specification gives a verbal explanation of the frequency differentiation, and points to equation 20 (found on page 31 of the specification) detailing how the instantaneous frequency differentiation is performed, thereby enabling to one of ordinary skill in the art on how to perform this calculation. Therefore, the rejection of claims 1-6 has been withdrawn.

### ***Allowable Subject Matter***

2. Claims 1-6 are allowable over the prior art of record.
3. The following is an examiner's statement of reasons for allowance:

As per independent claims 1,4, the recited limitations pertaining to performing the partial differentiation of the instantaneous frequency with respect to frequency, and then with respect to time, as detailed on pages 31-32 of the specification, is not explicitly

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taught by the prior art of record. Furthermore, it would not have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of the prior art of record to obtain the recited limitations of claims 1 and 4 above.

With respect to the prior art of record, it is old and notoriously well known to manipulate the characteristics of the instantaneous frequency to develop features of the speech signal itself, (via short term frequency manipulation). For example, Boashash (“Instantaneous Frequency Estimation and Automatic Time-Varying Filtering”) teaches an estimator in calculating the instantaneous frequency (page 1222). Yang et al (“Application of Instantaneous Frequency Estimation for Fundamental Frequency Detection”) teaches another mathematical expression to calculate instant frequency (pp 616). Arnold et al (“Filtering Real Signals Through Frequency Modulation and Peak Detection in the Time-Frequency Plane”) teaches a time-frequency distribution equation used to provide an estimate of peak frequencies (pp 345). However, none of the prior art of record teaches the recited limitations pertaining to the differential equations as noted in applicant’s specification.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

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### EXAMINER'S AMENDMENT

4. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

- a) In the abstract, remove the spacing between "...can be interpreted quantitatively" and "In a method of extracting....", so as to form a single paragraph abstract.

### *Conclusion*


5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Opsasnick, telephone number (571)272-7623, who is available Tuesday-Thursday, 9am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's acting supervisor, Mr. David Ometz, can be reached at (571)272-7593. The facsimile phone number for this group is (571)272-7629.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 2600 receptionist whose telephone number is (571) 272-2600, the 2600 Customer Service telephone number is (571)272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mno  
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DAVID L. OMETZ  
PRIMARY EXAMINER